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TBD/TBR/TBS LIST

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SECTION 1

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SECTION 2

L7-PM-235C	Landsat 7 Solid State Recorder Interface Control Document, September 1995
TBD	ICD for WOTIS and MOC
TBD	Mission Operations Plan
TBD	ICD for EDC DAAC and Landsat 7

SECTION 3

3. LANDSAT 7 SYSTEM DATA ACQUISITION DESCRIPTION

3.1 *Landsat 7 Project Operational Overview*

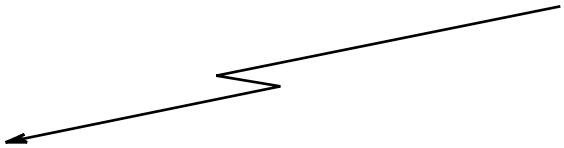
- Performing operations functions on behalf of NOAA, including data capture, data processing, assuring system performance and quality, and distributing data to all users.

3.1.2 **Landsat 7 System Operational Overview**

Mission planning and Satellite operations will be conducted in the Mission Operations Center (MOC), located at Goddard Space Flight Center, Building 32, Greenbelt, Maryland. Wideband

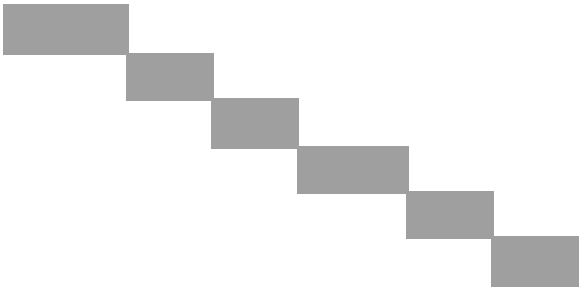
Those communication links marked with an asterisk are collectively referred to as the Landsat Ground Network (LGN). The LGN scheduling and operations are controlled by the WOTIS. The Nascom provides ground communication links among the Ground Stations and the Ground Data Handling Segment elements. Figure 3.1-1 depicts the various elements and the data exchanges pictorially. The data exchanges are discussed in detail in Section 3.2.

Data Acquisition activities are divided into Mission Planning and Mission Operations for discussion, although both take place concurrently on a daily basis. Mission Operations are further divided into Flight Operations and Data Processing Operations. Mission planning and Flight Operations are conducted in the Mission Operations Center (MOC), based on LCG policy decisions which flow to the MOC through the Mission Management Office (MMO). During the



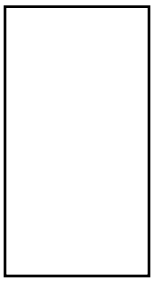
Requests from the MMO, request priority level, archive requirements, and S/C resources. The

frequency (RF) transmissions. Voice interfaces are for requests for information, coordination and problem resolution. Paper interfaces convey printed



information such as requests for information, printed schedules, and pass summary reports. The same type of information can be sent as text files across electronic interfaces. In addition, data files or packets such as telemetry data, command files, data bases, tracking and orbit

Figure 3.2-1. Landsat 7 Spacecraft Interfaces and Dataflows



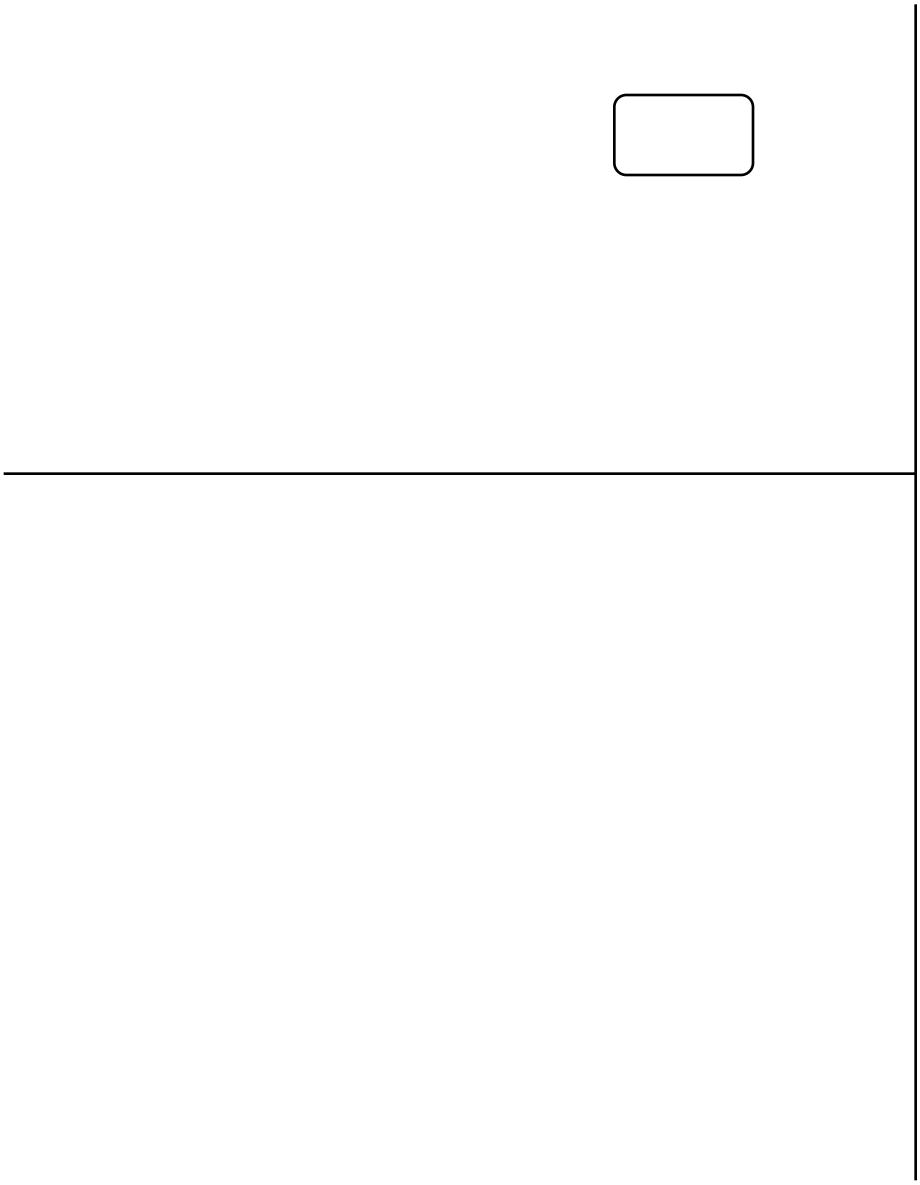
3.2.1.1.1.1 Link Description

3.2.1.2


Channel Select & CCSDS Decode Logic
Cmd Counter & Buffer

In response to SCP commands, the FSW may send commands to satellite subsystems or perform a flight software operation. SCP commands that are destined for satellite subsystems are sent to

NCC and the MOC is defined in Data Format Control Document Between the Network Control Center Data System and Payload Operation Control Centers, 530-ICD-NCCDS/MOC.



3.2.2.2

TBS

Figure 3.2-6. SGS Interfaces and Dataflows

TBS

Figure 3.2-7. AGS Interfaces and Dataflows

TBS

Figure 3.2-8. WOTS Interfaces and Dataflows

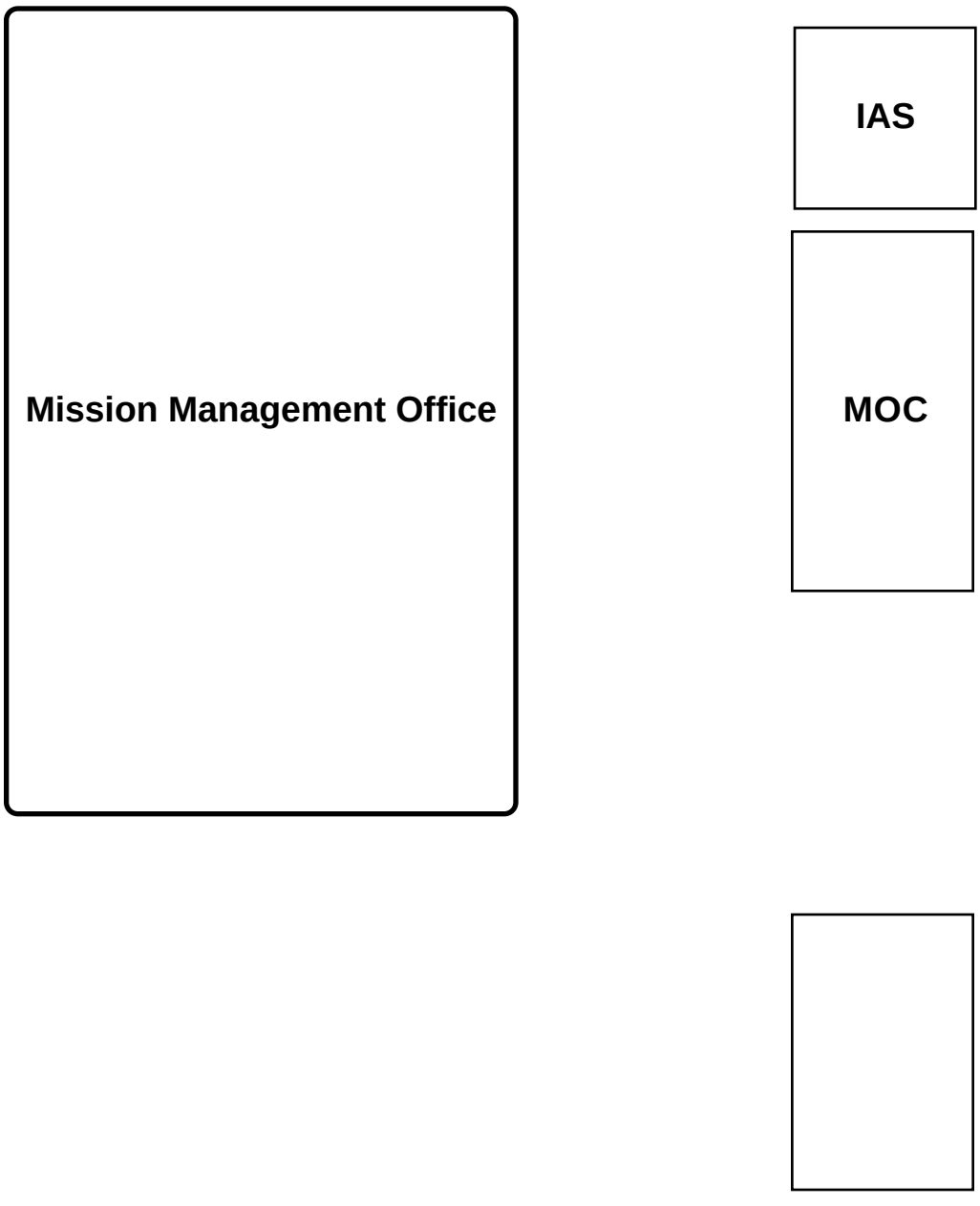
3.2.2.6

Figure 3.2-10. International Ground Station Interfaces and Dataflows

3.2.3 Ground Systems Operations

The Landsat 7 Ground System functions include mission planning, operations planning, S/C operations, data acquisition, data processing, data archiving, and distribution, and data assessment. The Ground System includes the following elements:

Mission Management Office
Mission Operations Center

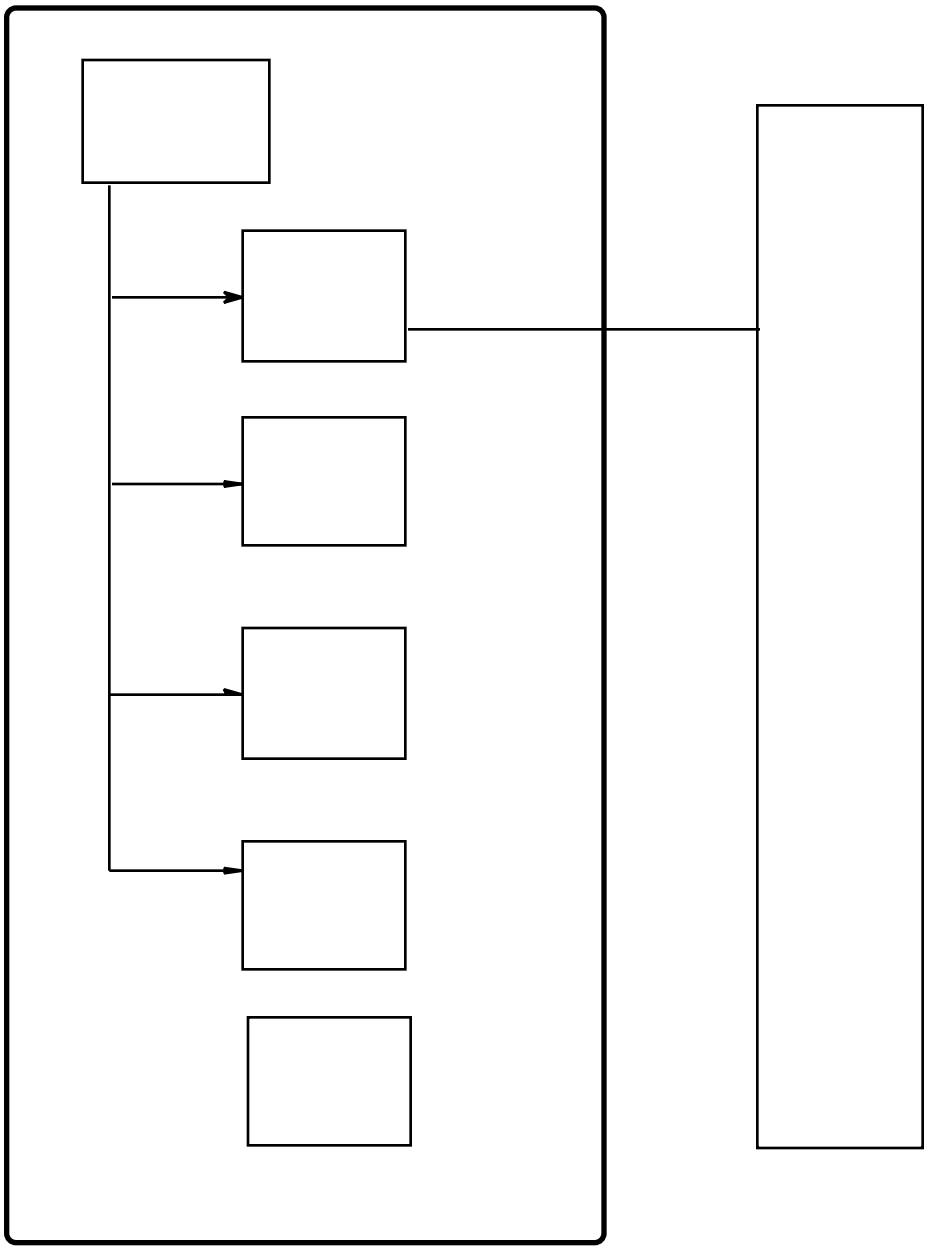

Mission Management Office
IAS
MOC

3.2.3.2

3.2.3.3

3.2.3.4

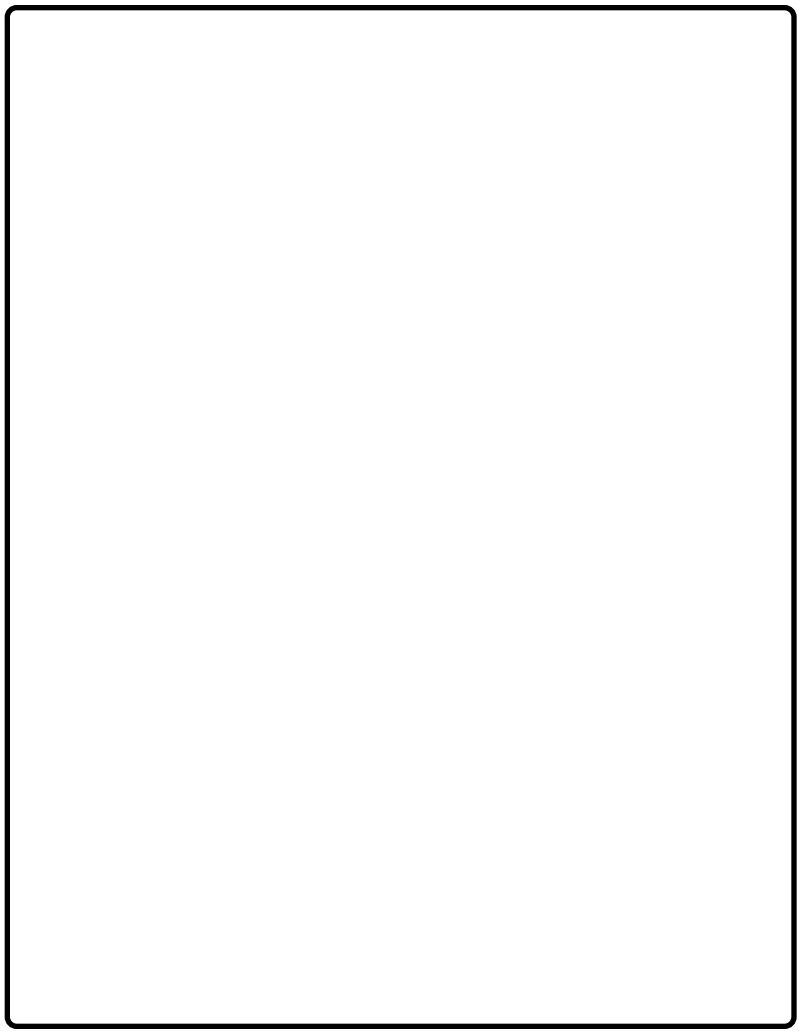
3.2.3.5

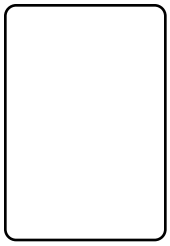


3.2.3.6

The EDC DAAC receives orders from users for products, supplies those products and billing

3.2.3.8





3.3 *Data Flows*

This section traces the flow of the various data types from their origin to their destination(s), and describes the transmission medium and data forms along the way. By tying together, at the interfaces, the elements that handle the data in an end-to-end flow, it provides a clearer

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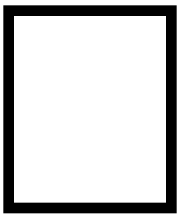
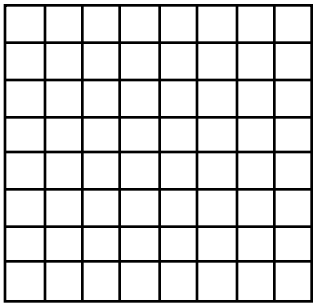
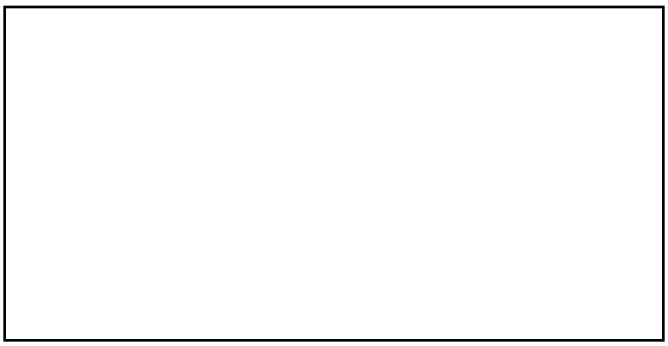
January 9, 1997



3.4 *Data Description*





3.4.3 **Wideband Data**

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Error! No topic specified.

Organization

Predicted orbit state vectors	FDF	MOC	Predicted state vectors on 12-minute centers; uploaded to satellite	Daily a within 4 comple

SECTION 4

4. ACRONYMS AND ABBREVIATIONS

0R	Zero R (level of processing for Wideband Data)
ACS	Attitude Control System

DFCB	Data Format Control Book
DIS	Data Information System
DLT	Digital Linear Tape
DOC	Department of Commerce
DOI	Department of Interior
ECS	EOS DIS Core System
EDC	EROS Data Center
EOS	Earth Observing System
EPS	Electrical Power Subsystem
EROS	Earth Resources Observation System
ETM+	

LWIR	Long Wavelength Infrared
MMO	

WOTS	Wallops Orbital Tracking Station

be integrated are the Mission Operation Center (MOC), Landsat Ground Station (LGS), Landsat Processing System (LPS), Image Assessment System (IAS), Landsat Ground Network (LGN), and EROS Data Center (EDC) Distributed Active Archive Center (EDC DAAC).

The MOC will be integrated with the LGS, LPS, IAS, EDC DAAC, and lGSs and their interfaces tested. The MOC will also be integrated with support facilities such as, Flight Dynamics Facility (FDF), Network Control Center (NCC), White Sands Complex (WSC), NASA Communications (Nascom), National Meteorological Center, and Landsat Ground Network (LGN).

A1.3.1.2 Command and Telemetry Data Flows

The MOC Command and Telemetry Data Flows provides an initial demonstration of the capability of the MOC and FOT to Control the satellite through real time commands, to monitor the health and safety of the satellite, and to verify command receipt and execution via narrowband telemetry.

A1.3.1.6 System End-to-End Test

This is mainly a monitoring function to verify that the satellite is in a launch ready state after an initial command and telemetry check. This does include verifying the capability to accept commands periodically.

A1.3.2.3 Launch